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The Cloze Test as a Measure of Second Language

Proficiency for Young Children

Merrill Swain, Sharon Lapkin and Henri C. Barik

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This paper presents empirical data concerning the use of a cloze test as a measure of second language proficiency. Grade four students in their fifth year of a French immersion program were tested using both English and French cloze tests. Correlations between the cloze test and other language achievement measures were calculated for both languages and were found to be high. It is suggested that in summative evaluations, the cloze technique provides a useful measure of overall second language proficiency with this age group, and that an error analysis of individual items yields valuable information for formative evaluations.

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The Cloze Test as a Measure of Second Language
Proficiency for Young Children¹

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The purpose of this paper is to present some empirical data concerning the use of a cloze test as a measure of second language proficiency. These data were collected as part of a long-term study conducted by the Bilingual Education Project of the Ontario Institute for Studies in Education. The Project is involved in the evaluation of a number of innovative bilingual education programs throughout Ontario. The most extensive of the programs followed by the Bilingual Education Project is the early grade French immersion program in operation currently through to grade five in the public schools of both the Ottawa Board of Education and the Carleton Board of Education. Presently upwards of 30% of all English-speaking children who start Kindergarten in the Ottawa public school system are enrolled in it.

Many of you are probably familiar by now with the immersion concept. Basically, what it means is that English-speaking children attending regular English schools are taught completely in French from Kindergarten up to grade four, except for approximately one hour per day of English Language Arts introduced in either grade two, or grade three. As of grade five a greater proportion of the curriculum is taught in English, and eventually the program changes to one in which approximately 50% of the curriculum is taught in English and 50% in French.

Approximately six years ago, the evaluation component of the Project was initiated to consider two basic questions posed by educators, parents

and researchers alike. They asked whether instruction of the prescribed curriculum through the medium of a second language (French) would have any harmful effects on native language (English) skills, on achievement in such basic academic skills as reading and arithmetic, or on the pupil's IQ and general cognitive development. The second question concerned the level of French proficiency reached by students in the French immersion program.

The results of the evaluations of the Ottawa French immersion program and of similar programs in other localities have in general been positive, showing a substantially greater level of proficiency in French by immersion children than has been possible through more traditional methods of teaching French as a second language. Furthermore, no long lasting lags or delays have been noted in the attainment of English language skills, mathematics or other educational objectives (see, e.g., Barik & Swain, 1975; 1976a; Edwards & Smyth, 1976; Genesee & Chaplin, 1975; Lambert & Tucker, 1972).²

Generally speaking, these conclusions have been reached on the basis of standardized measures of achievement such as the Metropolitan Achievement Tests (used to measure English language proficiency and mathematical knowledge) and the Test de Rendement en Français, a standardized measure of French language achievement described below.

As a tool in summative evaluations, such standardized tests are time-consuming both to administer and score. We therefore decided last year to make use of the cloze technique on an experimental basis to measure both the first and second language proficiency of immersion pupils at the grade four level.

In a cloze procedure test, every nth word (in this particular case, every 7th word) is deleted from a passage of prose and the students are asked to supply the missing words. This technique has been used to measure second language proficiency in adolescent or adult second language learners (e.g., Oller & Conrad, 1971; Stubbs & Tucker, 1974), but, to our knowledge, has not been used with young second language learners in bilingual programs.³ The cloze technique has been found to be highly reliable (e.g., Oller & Inal, 1971). Moreover, the tests are easy to construct, and economical to administer and score. We felt that if the use of the test proved to be feasible with younger students and the results correlated highly with other second language achievement measures, we would have found a valuable technique for measuring second language proficiency in young children.

To investigate this matter, two French achievement tests as well as a French cloze test were administered to the pupils in the Ottawa immersion program at the grade four level. These tests will be briefly described and then the relationship of the data obtained from these tests with those obtained from the cloze test will be discussed.

The grade four level of the Test de Rendement en Français was administered to measure French language achievement. It was developed by the Commission des Ecoles Catholiques de Montréal and standardized on native French-speaking children in that Board. The test involves 40 items on ten topics such as synonyms, antonyms, the rearrangement of words into a sentence, familiarity with tenses and stylistics. Total test scores were used, as subsections of the test consisted of only a few items each.

French reading comprehension was measured by means of the grade four level of the Test de Lecture which was developed by the Bilingual

Education Project staff in close coordination with consultants to the French immersion program. Each level of the test consists of a number of short passages followed by a series of questions.

The French cloze test consisted of a short story written especially for this purpose by a specialist in children's literature. As is customary, a few sentences were left intact at the beginning and at the end of the passage to provide context. Every seventh word was deleted for a total of thirty deletions. Two scores were obtained: exact responses and acceptable responses. In the former case, the student's response had to be exactly the same as the word deleted to be considered correct. In the latter case, words which were judged appropriate by two native speakers were scored as correct. Spelling errors were ignored.

Results

In order to determine the validity of the French cloze test as a measure of second language proficiency, we correlated the scores from both the exact-response method of scoring and the acceptable-response method of scoring with the French achievement measures. The results are shown in Table 1 and are based on a sample of 64 grade four pupils.⁴ Exact and acceptable French cloze scores correlate .77 and .78 respectively with the Test de Rendement en Français and .77 and .80 respectively with the Test de Lecture. In all cases the correlations are higher than the .72 correlation which was found between the Test de Rendement en Français and the Test de Lecture.

TABLE 1

Correlations between French Cloze Test and French Achievement Scores at the Grade Four Level

	French Cloze Exact	French Cloze Acceptable
Test de Rendement en Français	.77	.78
Test de Lecture	.77	.80
French Cloze Exact		.96

Note: All correlations are significant ($p < .001$)

The exact-response method of scoring and the acceptable-response method of scoring correlate very highly (.96), indicating that an exact-response method of scoring is indeed as satisfactory as the acceptable-response method. It is worth mentioning that the exact-response method of scoring is less difficult and less time-consuming to carry out because native speakers are not needed to judge the acceptability of the responses. However, the acceptable-response method yields valuable information for formative research.

With respect to other test statistics, only in the case of five out of the 30 items was the discrimination index (point-biserial correlation coefficient between item and total test score) under .30, indicating that most of the items discriminate well between students who obtain high and low scores on the test as a whole. The Kuder-Richardson formula yields a reliability coefficient of .85.

These results suggest that the cloze procedure is an effective tool for measuring second language proficiency of children at the grade four level. It is interesting to note that the same pattern of scores is observed in relation to a cloze test in English which was also given, that is, that the correlations between English language achievement data and the English cloze data are also high, ranging from .58 to .70. Furthermore, the acceptable-response method of scoring correlates highly (.86) with the exact-response method of scoring, and finally the English cloze scores correlate more highly with each English language achievement score than the English language achievement scores do with each other. It is also interesting to note, as shown in Table 2, that the correlations between English cloze and French cloze scores are high - all in the range of .63 to .68.

TABLE 2

Correlations between English Cloze and French Cloze at the Grade Four Level

	English Cloze Exact	English Cloze Acceptable
French Cloze Exact	.67	.63
French Cloze Acceptable	.64	.68

Note: All correlations are significant ($p < .001$)

A detailed analysis of the types of errors made by the immersion pupils on the English and French cloze tests and by a comparison group of English-educated grade four pupils on the English cloze test is presently being carried out. From the analyses to date, the following trends have been noted:

First, the French immersion pupils do not make more errors than their English-educated peers on the English cloze test, substantiating the analysis of the English achievement data reported elsewhere which indicate no differences between the two groups (Barik & Swain, 1976b).

Secondly, in the case of immersion pupils, the same percentage of errors (57%) occurred in English and French when the exact-response method of scoring was used. However, when the acceptable-response method of scoring was used, the percentage of errors made in French (47%) was greater than in English (36%). The latter finding substantiates the language achievement test data which indicate that the immersion children are more proficient in their first language than their second language. The difference in the percentage of errors found when using the exact-response versus the acceptable-response method of scoring may be indicative of inherent structural differences between English and French.⁵ This difference suggests that comparing the percentage of correct responses across languages is not a valid indication of relative proficiency in the two languages - at least when the exact-response method of scoring is used. What is needed to interpret how well the immersion children are doing in French is data from native French-speaking

students. We are presently collecting these data.⁶

The detailed analysis of the French cloze items has also enabled us to pull out information of a different sort. For example, we have information on the relative difficulty posed by the various parts of speech to the students tested (see also Stubbs & Tucker, 1974). One could also use the error analysis to examine, for example, specific spelling or grammatical problems. This type of information should be useful to teachers and consultants in their planning and development activities related to the language curriculum.

In summary, this study has indicated that cloze tests can be used effectively with young children. Furthermore, the cloze technique has been shown to be a valid and reliable means of measuring second language proficiency. These characteristics along with the fact that it is easy to construct, administer and score combine to make the cloze technique an efficient tool to use in summative evaluations. In addition, a detailed analysis of the types of errors made on a cloze test shows promise as an excellent source of information in formative evaluations.

FOOTNOTES

- ¹ This paper was presented at the Annual Conference of the Canadian Educational Researchers Association, Canadian Society for the Study of Education, Laval University, Québec, June 1976. The authors would like to express their thanks to Edna A. Nwanunobi and Kathy Scott for their assistance in scoring the tests and in data analysis.
- ² For an extensive bibliography of research reports - published and unpublished - relating to immersion programs, see Swain, 1976.
- ³ One study (Wijnstra and vanWageningen, 1973) examines the use of the cloze technique with children in grades 4, 5 and 6; however, the context is quite different. In their study, the language proficiency in Dutch of a small sample of Spanish immigrant students was measured using the cloze technique.
- ⁴ The analysis of these data was done in conjunction with another study which was restricted to those students who had taken our battery of tests every year since grade one, a total of 64 immersion pupils.
- ⁵ In the cloze tests, more blanks to be completed referred to items that were nouns in English than in French. This in itself could account for the difference between the two methods of scoring, and may or may not indicate inherent differences between the languages. Another reason for the difference, however, may lie in the lack of choice in, for example, prepositional use in French relative to English.
- ⁶ A report including discussion of the performance of French immersion pupils relative to that of native French-speaking peers is now in preparation, and will be available in the fall of 1976. The new versions of the English and French cloze tests will be appended to the forthcoming paper.

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